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1: [Zhonghua Wai Ke Za Zhi](#). 2002 Feb;40(2):107-11.

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## [Severely burned patients after surgery: recombinant human growth hormone therapy its metabolic effects]

[Article in Chinese]

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**OBJECTIVES:** To observe the effect of recombinant human growth hormone on metabolism in severely burned patients. **METHODS:** From January 1999 to January 2001, 50 patients, aged 12 to 50 years, with over 30% total body surface area (TBSA) and 10% full-thickness burns, were randomized in a double-blind study. In the control group normal saline was used as a placebo (control group), while 0.3 IU/kg(-1) /d(-1) recombinant human growth hormone was given from postoperative day 1 to day 10 in the rhGH group. The excised burn wounds were closed with microautograft and allograft skin. Blood samples were collected at 6:00 am for assaying of growth hormone, blood glucose, blood insulin, anti-insulin antibody, glucagon, cortisol, serum amino acid profile, transferrin, proalbumin, total protein, dielectric, and resting energy expenditure (REE) was also measured. **RESULTS:** The concentration of blood GH in both groups was lower ( $t = 2.806$ ,  $P < 0.05$ ) than that of physiological values before surgery. However, the concentration of GH on POD 3 in the rhGH group was significantly higher than that of normal values, but a higher level was observed on POD 7 in the rhGH group than that of the control group ( $t = 3.142$ ,  $P < 0.05$ ). Although the concentration of anti-insulin antibody was slightly increased, there was no significant difference between the two groups. The concentration of glucagons tended to decrease with an increase in the concentration of blood glucose, and it was marked in the rhGH group. There was no significant difference between the two groups. The concentration of cortisol was higher than normal values, but no significant difference was observed between the two groups. With the administration of rhGH, the plasma concentration of amino acids was lower than that of the control group ( $t = 2.714$ ,  $P < 0.05$ ), and the urinary output of 3-MH in the rhGH group was lower than that of the control group ( $t = 2.207$ ,  $P < 0.05$ ). **CONCLUSIONS:** Administration of rhGH in patients with major burn after surgery could improve their metabolic status, namely, increased lipolysis energy, accelerated protein synthesis, accelerated gluconeogenesis, reduced muscle proteolytic rate, and reduced REE expenditure. There is no effect on stress hormone. rhGH exerts a beneficial effect on metabolism in severely burned patients, but hyperglycemia is apt to occur, and water, Na (+), Cl(-) retention are suggested.

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